DOCUMENT RESUME

ED 322 277 UD 027 589

AUTHOR	Mei, Dolores M.; And Others
TITLE	Inquiry Demonstration Project 1988-89. OREA Report.
INSTITUTION	New York City Board of Education, Brooklyn, NY. Office of Research, Evaluation, and Assessment.
PUB DATE	Jun 90
NOTE	30p.
AVAILABLE FROM	Office of Research, Evaluation, and Assessment, New York City Board of Education, 110 Livingston Street, Brooklyn, NY 11201.
PUB TYPE	Reports - Evaluative/Feasibility (142) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Demonstration Programs; Dropout Prevention; *Dropout Programs; *High Risk Students; High Schools; High School Students; *Inquiry; *Inservice Teacher Education; Program Evaluation; *Thinking Skills; *Urban Schools
IDENTIFIERS	*New York City Board of Education

ABSTRACT

The 1988/89 New York City high school Inquiry Demonstration Project (IDP) met or surpassed its evaluation criteria. The IDP comprised the Urban Academy, a laboratory school serving high-risk students, and an on-site staff development program in seven high schools. The overall goal was to promote the use of the inquiry method in the classroom. The inquiry method is a student-centered process in which students question, analyze, and evaluate a body of material. Through increased use of the inquiry method, the program sought to develop students' critical thinking skills and to encourage high risk students to stay in school. Evaluation objectives were that 70 percent of the Urban Academy students would increase their attendance rates and be enrolled in a high school program as of spring 1989. The Academy students achieved an 87 percent attendance rate and a 93 percent retention rate. Interviews with students and teachers indicated satisfaction with the Academy and the on-site programs, but the Academy did not appear to serve as a training site to the extent that it had in previous years. The on-site programs appeared to serve as an antidote to burnout and as a focus of teacher creativity and innovations. Recommendations for improvement include encouraging on-site program teachers to remain in the program longer, redevelopment of the Academy as a training site, and a future evaluation of the success of the inquiry method in promoting critical thinking. (FMW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED322277

OREA Report

INQUIRY DEMONSTRATION PROJECT
1988-89

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

UD027589

BEST COPY AVAILABLE

Office of Research, Evaluation, and Assessment
Robert Tobias, Director
John E. Schoener, Chief Administrator

June 1990

INQUIRY DEMONSTRATION PROJECT
1988-89

Prepared by the OREA
High School Evaluation Unit

Dolores M. Mei
Evaluation Manager

Jan Rosenblum
Evaluation Associate

John Berman
Linda Solomon
Evaluation Consultants

New York City Public School
Division of Strategic Planning/Research and Development
Robin Willner, Executive Director

NEW YORK CITY BOARD OF EDUCATION

Gwendolyn C. Baker
President

Irene H. Impellizzeri
Vice President

Carol A. Gresser
Westina L. Matthews
Michael J. Petrides
Luis O. Reyes
Ninfa Segarra
Members

Joseph A. Fernandez
Chancellor

It is the policy of the New York City Board of Education not to discriminate on the basis of race, color, creed, religion, national origin, age, handicapping condition, marital status, sexual orientation, or sex in its educational programs, activities, and employment policies, as required by law. Any person who believes he or she has been discriminated against should contact his or her Local Equal Opportunity Coordinator. Inquiries regarding compliance with appropriate laws may also be directed to Mercedes A. Nesfield, Director, Office of Equal Opportunity, 110 Livingston Street, Room 601, Brooklyn, New York 11201; or to the Director, Office for Civil Rights, United States Department of Education, 26 Federal Plaza, Room 33-130, New York, New York 10278.

7/3/90

SUMMARY

The 1988-89 Inquiry Demonstration Project (I.D.P.) consisted of two tiers: a laboratory school (Urban Academy) serving high risk students who had been referred to the program, and an on-site staff development program in seven New York City high schools.

Purpose

The overall goal of the 1988-89 I.D.P. was to promote the use of the inquiry mode of education in the classroom. The inquiry mode is a student-centered process in which the student questions, analyzes and evaluates a body of material. Through increased use of the inquiry mode, the I.D.P. sought to develop students critical thinking skills and to encourage high risk students to stay in school.

PROGRAM GOALS

The program's stated evaluation objectives were that 70 percent of the Urban Academy students would increase their attendance rates, and that 70 percent of the Urban Academy students would be enrolled in a high school program as of spring, 1989.

CONCLUSIONS

The 1988-89 I.D.P. met or surpassed its evaluation objectives. The Academy students achieved an 87 percent attendance rate, and a 93 percent retention rate. In addition, interviews indicated that teachers and students were satisfied with both the Academy and the on-site programs.

The Academy appeared to provide a viable, alternative education for high risk, academically able young people. However, the Academy did not appear to serve as a training site to the extent that the previous lab school had. The on-site programs appeared to serve as an antidote to burn-out and as a focus of teacher creativity and innovation.

Based on the findings of the evaluation, the following specific recommendations were made:

- Administrators should encourage on-site programs teachers to remain in the program long enough to allow for experimentation and development;
- The lab school should be re-developed, as in previous years, as a training site for on-site program teachers;
- Future evaluators should assess whether inquiry achievers its goal to promote critical thinking.

TABLE OF CONTENTS

		Page
I.	INTRODUCTION	1
	Program Background	1
	Program Components	2
	Population Served	2
	Program Objectives	3
	Evaluation Methodology	4
	Scope of the Report	5
II.	PROGRAM IMPLEMENTATION	6
	Inquiry Process	6
	Urban Academy	6
	On-Site Programs	12
III.	OUTCOMES	17
	Student Retention	17
	Attendance	17
	Courses Passed	17
	Attitudes Toward School	18
	Teachers' Behaviors	19
	Curriculum Development	20
IV.	CONCLUSIONS AND RECOMMENDATIONS	22

I. INTRODUCTION

PROGRAM BACKGROUND

The Inquiry Demonstration Project (I.D.P.) began in New York City high schools 10 years ago as a staff development program in five high schools. Four year ago, a laboratory school was added to the program. In 1988-89, the laboratory school changed its name from the urban Institute to the Academy and moved from the School of Cooperative Technical Education to the High School for the Humanities.

The overall goal of the I.D.P. Program is to promote the use of the inquiry mode of education in the classroom. The inquiry mode of education, regardless of curricular area, encourages the learner to question to evaluate, to analyze, and to engage in critical thinking. Various techniques are used to further this process, including speakers, debates, interviews, and small group work. Through increased use of the inquiry mode, the I.D.P. program seeks to: develop students' critical thinking and reasoning skills; and encourage high risk students to stay in school.

According to Division of High Schools staff, the budget for the 1988-89 Inquiry project was $750,000. Program directors dispute this amount and break down their funds from D.H.S. by semester as $287,971 for the Urban Academy's instructional budget, $105,421 for staff development and $293,392 in P.C.E.N. and tax-levy funds.

PROGRAM COMPONENTS

The 1988-89 I.D.P. program consisted of two tiers: a laboratory school (Urban Academy) serving high risk students who had been referred to the program, and an on-site staff development program in seven New York City high schools;

POPULATION SERVED

Urban Academy

In 1988-89, the laboratory school served 58 students. Seventeen of the students had admitted to the school prior to September 1988; 14 were added to the roster as of Sept., 1988; the rest (close to one-half) entered the Academy between September, 1988 and April, 1989.

All of the students had been enrolled in other schools before they began to attend Urban Academy. Approximately one-third of the students had been enrolled in high schools with a special focus (e.g., Manhattan Center for Math and Science). The remaining students had been enrolled in academic-comprehensive schools (e.g., Erasmus), or in private or parochial schools (e.g., Xavier). In 1988-89, the Urban Academy did not grant its own diploma to graduating students. Students who entered the Academy either remained on the roster of their "home" school, or were added to the population of High School for the Humanities.

More than half of the students had attended high school for four or more semesters prior to beginning the school year 1988-89 at Urban Academy. Eight students were in their first or second semester of high school (Grade nine) during 1988-89; 11 in their

third or fourth semester; 22 in their fifth or sixth semester, and 15 in their seventh, eighth, ninth or tenth. Two students were missing grade status.

According to academy personnel, students were often referred to the Academy by guidance counselors. Generally, these students had either been absent and/or cutting, and were failing their courses. However, they were not necessarily deficient in academic ability or skills.

On-Site Program

In 1988-89, the on-site program was operative in seven high schools as follows: Bronx High School of Science; Bronx Regional High School; John Bowne High School; John F. Kennedy High School; Morris High School; Satellite Academy; and West Side High School. The program took a unique form at each school. However, in general, at each school, five to ten participating teachers and one coordinator were involved in the program, and attended meetings and workshops within their own school and at central locations.

Participating teachers used an inquiry method whenever possible. Teachers' specialties included art, drafting, social studies, English, English as a second language, biology, and chemistry. Students in all grades were exposed to the inquiry method through these teachers.

PROGRAM OBJECTIVES

For the purposes of this evaluation, the Division of High Schools articulated the following objectives for the program.

- Seventy percent of the students in the Urban Academy will increase their attendance rates from the 1987-88 school year (or the year prior to entering the Academy) to the 1988-89 school year.

- Seventy percent of the Urban Academy students will be enrolled in a high school program as of spring, 1989.

EVALUATION METHODOLOGY

The Office of Research, Evaluation and Assessment (OREA) conducted an evaluation of the 1988-89 I.D.P. program, collecting qualitative data on the on-site program, and both qualitative and quantitative data on the Urban Academy program.

Qualitative information included individual interviews with samples of school coordinators in the on-site program and teachers at the Urban Academy, and group interviews with Urban Academy students and students in an on-site school. Quantitative data included attendance and course data for students in the Urban Academy program, both before and after entrance into the program.

The evaluator made site visits to a sample of schools in the on-site program. The sample of sites included one special science school, Bronx High School of Science, one alternative high school, Bronx Regional High School, and one academic-comprehensive school, J.F. Kennedy High School. At each site, the evaluator interviewed the coordinator(s), and a sample of students (in groups) and teachers. She also observed classes and meetings of their coordinator with other inquiry teachers. At one school, she interviewed the school principal.

The evaluator also made site visits to the Urban Academy.

At the Academy, the evaluator interviewed the director, teachers, consultants, and students (in groups). She also observed classes, breaks, and meetings.

Finally, the evaluator visited the Office of the Superintendent of Alternative High Schools and Programs and interviewed the Assistant to the Superintendent.

SCOPE OF THE REPORT

This report describes the implementation and evaluates the impact of the 1988-89 Inquiry Demonstration Project. Program organization and implementation are described in Chapter III. Conclusions and recommendations are described in Chapter IV.

II. PROGRAM IMPLEMENTATION

INQUIRY PROCESS

The evaluator interviewed a sample of teachers and students to learn how the inquiry process was implemented at both the Urban Academy and the on-site program schools. The students described the inquiry process as encompassing a good deal of involvement, research, discussion, and writing. The teachers described the inquiry process as requiring flexible planning and instruction. First, a topic was chosen; then, the teacher gathered appropriate resources. The class learned through investigations, debates, interviews, reports, projects, etc. Examinations tended to involve critical evaluation and research design. The evaluators observed a number of inquiry classes, and found that the exact events varied depending on participants, subject-matter, setting, etc. The constants were the student centered approach, the in-depth study of each topic, the emphasis on critical thinking, and the emphasis on research.

URBAN ACADEMY

Administration and Faculty

In 1988-89, the Urban Academy had a full time administrative staff of two (director, secretary), six full-time faculty, and a number of consultants, in such areas as video, drama, and art. Each of the full-time teachers taught a reduced load of courses, along with some combination of consultations with on-site coordinators; workshops for teachers or students; and curriculum

development.

The Academy made use of outside resource people from universities, city agencies, industry, former graduates, etc. The Academy had no library of its own, but utilized facilities outside the school (e.g., N.Y.U. Library, Schomberg, Children's Developmental Center) and conferences on matters of interest to the students. For example, in 1989, one group of students accompanied a staff member to a Mississippi conference on civil rights.

The Academy had no full-time guidance staff; formally, students were advised by the staff in their "home" schools. Informally, all of the teachers acted as advisors; also, the director did scheduling with each one of the students. Volunteer personnel and one consultant offered such services as psychotherapy and substance abuse therapy; however, the faculty suggested that some of the students had emotional problems that required better access to mental health services.

Students

A total of 58 students in grades nine through 12 were listed on the OREA-developed data retrieval form as being served during the 1988-89 school year. The students were a hetero- geneous and integrated group from a variety of public and private, specialized and academic-comprehensive high schools. The two schools sending the largest number of students to the Academy were Bronx Science (N=10, 17 percent of the student body), and High School for the Humanities (N=6, 10 percent of the student

body). The majority of the students (N=37, 64 percent of the student body) registered as High School for the Humanities students after they began at the Academy.

Typical class size was 15 students; the size of the student body was limited both by the Academy personnel's intention to maintain their personal, informal atmosphere and also by space restrictions. The faculty expressed the desire to add one useable classroom and expand the population to a maximum of 75.

The faculty at the Urban Academy described the students as those who "march to their own drummer," students who are bright but ready to drop out of school. The principal at Bronx Science said that he sends the Academy the bright underachievers, those who haven't succeeded despite the school's effort. He suggested that these students are an under-served group. The students at the Academy described themselves as unhappy with the regimentation and restrictions of their previous schools. They said that they had resented the feeling of anonymity, and the feeling that they were being pumped full of material.

In 1988-89, the Academy received inquiries from students who had been referred by guidance counselors, and students who had heard about the Academy from friends or parents or others in a group home. Some students had been referred by the superintendent's office. The Academy's admissions procedure seemed to serve to limit entrants to those who could commit themselves to going to school and studying at the Academy. Any student who wished to register at the Academy was interviewed by

a committee of teachers and another committee of students, filled out an application form, and then spent at least a half a day at the Academy as a visitor. During these visits, the would-be student met the administration, faculty, and students, attended classes with a current student, and heard the rules and regulations of the Academy. These admissions procedures convinced some students that the Academy was not a suitable place for them.

The Academy attempted to limit registration time to the beginning of the semester and used the first two weeks of the semester as an opportunity to introduce students to the inquiry method and to one another. At that time, students took special short-term courses, working in problem-solving groups of six or seven, and concentrating on a limited number of topics. This two-week period served as a trial and orientation period for new students. As the year progressed, the Academy received more requests for admission (approximately three to five per week) than it could accommodate. The Academy attempted to admit those students who could best be served by the school--students who were ready for an academic challenge but were failing or not attending their present school. Students who were not admitted included those who required special education, E.S.L. classes or remedial classes. When admissions decisions were being made, the entire staff discussed the issue. The staff felt committed to give some help to the students who were not admitted, and wherever possible, guided them to other options that might better

serve them or, late in the year, have room for them.

Curriculum

Students at the Urban Academy designed individual programs of courses in consultation with the director. Courses were open to qualified students at any grade level. The curriculum was structured to enable students to achieve a Regents or a non-Regents diploma*, but the program was intended to be a college-preparation program. The curriculum was distinctive in the following: the noticeable presence of creative areas; the emphasis on social issues; and the use of inquiry in the classroom. In creative areas, the students were encouraged to take such courses as painting, video, and drama. The social issues focus could be seen in every course (e.g., a discussion of research ethics in the biology course; a social studies course on human rights), and also in the community service projects that each student undertook on a once-a-week basis. The inquiry model structured all of the classes. The evaluator observed a course in which the students, reading novels of their own choice, tried to discriminate the characteristics of good literature versus "junk," a social studies course, in which the students were evaluating their own interview of a police officer on the

---

* To receive a N.Y. State high school diploma, a student must complete 20 units (40 terms) of course work in specified areas. To receive a Regents high school diploma in N.Y. State, a student must complete diploma requirements and pass a specified number of N.Y. State Regents exams, including one each in English, American History and Government, and a second language, and two each in Science and Mathematics.

previous day, and a biology course in which students were designing and carrying out studies on animal behavior.

The faculty suggested the desirability of improving the curriculum by: offering the students better science research facilities, providing access to a research library on the premises, and making available a variety of physical education activities.

Teacher-Student Relationships and Attendance Outreach

The evaluator noted the warm atmosphere at the Urban Academy. The group held a monthly birthday party for those whose birthday was in that month. The daily schedule included breaks between classes, during which students congregated in groups. The classes were informal; the students brought their morning coffee to class; and called the director and all of the instructors by their first names. The director, the secretary, and the faculty shared one office with an open door; the office was used as a thoroughfare for students moving to classrooms or outside for breaks.

The Academy's director explained to the evaluator that the major rule of the Academy was to come to school and to class; either the director or a teacher made home phone calls to every student who cut and every student who was absent. Urban Academy students were allowed to walk out of the school during breaks between classes, or lunch time. At the end of every break, the director walked out to the sidewalk to remind the students to re-enter the school. To further emphasize the importance of

attendance, every teacher took attendance in every class. On the occasions that a student cut a class time, he/she was required to do an independent project to "cover" the class time that he/she missed. The director described cutting as a rare occurrence at the Academy.

ON-SITE PROGRAMS

Coordinator's Role

Each of the on-site programs was administered by one or more coordinators. The specific role played by each coordinator varied from school to school. For example, at Bronx Science, one faculty member (a social studies teacher) served as on-site coordinator, organizing weekly meetings and serving as liaison between I.D.P. participants, other faculty, and administration. Other faculty shared in such tasks as attending the monthly meeting of science faculty in various schools, and producing an ambitious proposal (ACOT - Apple Classroom of Tomorrow) for an inquiry program integrating the computer into the curriculum. At Kennedy, one faculty member (a science teacher) served as on-site coordinator, fulfilling many facilitative functions. He organized use of videotape equipment and the xerox machine, coordinated monthly and weekly meetings of Kennedy participants, and attended monthly coordinator's meetings. In addition, at Kennedy, one of the Urban Academy faculty members served as a consultant one day a week. He met with project members individually and in small groups, advising, planning, sharing curriculum resources etc.

In 1988-89, in many of the on-site schools, the coordinator was the main link between the academy and the on-site program. The coordinator attended the monthly meetings at the Academy and participated in such group tasks as planning summer workshops for on-site program participants. The evaluator was told that, in previous years, a closer liaison was maintained between the on-site schools and the lab school. Teachers from the on-site schools had taught at the lab schools. In 1988-89, much of the energy of the lab school personnel was focused on setting up the new site, resolving budget ambiguities, and bringing in new students. However, both the Academy faculty and teachers from the on-site program were interested in returning to a closer relationship.

In each on-site school, some support was given to Inquiry teachers and coordinators. The exact arrangement varied from school to school. For example, at Kennedy, the on-site coordinator was given one period per day released time. The teachers received per session pay for the monthly meetings after school. At Bronx Science, both the coordinator and participating teachers received released time.

Participating Teachers

A diverse group of teachers participated in the program at each school. Teachers came from a variety of disciplines, including science, art, English, and social studies. Many of the teachers had been teaching for a considerable number of years; the inquiry participants included both new teachers and 15-year-

plus veterans. Several interviewees (teachers, coordinators, and the principal at Bronx Science) suggested that I.D.P. has functioned as a cure or antidote for "burn out." An English teacher at Bronx Regional described her experience of moving into a new subject area (parenting and family relationships) through an inquiry project. An art teacher at Kennedy, in her first year of inquiry, but her 30th year of teaching, described the excitement of teaching an accustomed project (fashion design) in a new way (by asking the students to dress paper dolls and discover the variables that would make the design more or less attractive).

Students

Through the I.D.P. teachers, students in all grades and all curricular areas were exposed to the inquiry process. At Bronx Science, for example, each one of the ten participating teachers in 1988-89 was teaching four classes of approximately 32 students each day. In each grade, some of the classes were block programmed for both classes and lunch, and thus some of the teachers were encountering the same students. These students were chosen at random in grade 10. In grade 11, these same students were given the option to continue in the inquiry classes. The number of students actually exposed to inquiry classrooms, however, also included students of approximately 20 other teachers who had taken part in the program since it began in 1978, and approximately 25 other teachers who had attended staff development sessions.

Inquiry Classes

The evaluator observed a variety of classes using the inquiry approach. For example, at Bronx Science the evaluation team observed a block programmed group taking three courses (Global Studies, Mechanical Drawing, and Chemistry) together. In the Global Studies course, instead of covering the text through the traditional lectures, assigned essays, etc., the students were participating in a series of activities, including debates, interviews, etc. The major focus of the semester was on three or four projects. The students were divided into committees according to their interests; each committee produced a thesis, gathered evidence, and then presented the evidence to the rest of the class. The presentations included slide shows, videos, outlines etc. Students were evaluated according to pre-arranged criteria, including understanding of central concepts, memory of relevant information, effectiveness in speaking, ability to respond to audience questions, creative use of the subject matter, cogent outline, and substantive bibliography. In the class meeting observed by the evaluator, the students seated themselves in a circle; and spent the bulk of the time working through answers to an open-ended question sheet distributed the day before. The atmosphere was informal; the students were active and involved. Their goal was to evaluate the previous class (in which the author of a recent book had spoken about the causes of the Holocaust and been interviewed by the class). The instruction sheet for the previous day had asked the students to

answer the following questions: "Summarize the main points made by the speaker. Analyze the speaker's ideas. List three insightful questions you would like to ask the speaker." The instruction sheet for the observed day asked the students to answer the following questions: "List the questions you asked the speaker. What was your reaction to the speaker? What grade do you give yourself as an interviewer?" The students discussed their own effectiveness as interviewers and then the speaker's bias in presenting the material. They considered ways in which they might have improved their own interviews, and information that they would still like to obtain.

III. OUTCOMES

STUDENT RETENTION

Of the 58 students who were served by the Urban Academy during 1988-89, four were discharged for reasons other than graduation. Of these four, one reapplied for admission to the Academy and was planning to return to school in September 1990. The retention statistics of the Urban Academy exceeded both the objective of 70 percent retention, and the usual expectations of high-risk students in traditional high schools. The retention rate of 93 percent, however, was comparable to the retention figure cited for alternative schools by the assistant to the superintendent for alternative high schools.

ATTENDANCE

The Academy's records indicated a 90 percent attendance record (days present/total student days) for the fall and 85 percent for the spring. The attendance rate for the entire year was 87 percent. This appeared to be an improvement for students who had come to the Academy because of their poor showing at a previous school.

COURSES PASSED

In both the fall and the spring, the Urban Academy students took an average (mean and mode) of six courses each. Of these, they passed an average of 4.5 in the fall, and 4.2 in the spring. The pass rate in the fall was 76 percent, and that in the spring 71 percent. Those students who entered the program in the middle

of the school year, took and passed fewer courses than those who entered at the beginning.

Eight of the 15 Grade 12 students completed the requirements for high school graduation. Further, with only four exceptions, all of the students, passed some courses in both the spring and the fall. For some students, however, the progress was slow. Although all of the students took four or more courses, approximately 34 percent of the students passed three or fewer courses in the spring of 1989.

ATTITUDES TOWARD SCHOOL

Student interviews at both Urban Academy and Bronx High School of Science indicated that most students felt positively about their classes. The majority of the students (18 of 20) interviewed at the Urban Academy said that the program trained them in the thinking and evaluative skills that they needed for college.

The Grade ten social studies students interviewed at Bronx Science were concerned that they might fall behind in their ability to perform competitively (e.g., on a departmental midterm), however, they commended the inquiry approach for strengthening their skills to read and evaluate, to listen and remember, to organize their thoughts, and to be self-confident about speaking in a group.

The geography students interviewed at the Urban Academy were asked to discuss the validity of the social science approach that they were applying to the study of geography. Several students

expressed discomfort that they weren't asked to recount the facts on examinations; other students were pleased that they were asked to think and understand, rather than memorize.

TEACHERS' BEHAVIORS

Both Academy and on-site program teachers agreed that their own behavior changed in response to the experience with I.D.P. They spent more time on such activities as observing students, listening to the students, and preparing for class; instead of preparing a "developmental" lesson (setting out the goal and the path to it for each lesson), they made open-ended plans which left room for student input. They structured their classes more around: interviews, speakers, surveys, and research projects than they had previously. They tended to see their role as providing the students with the resources for gathering and evaluating information.

All of the teachers at the Academy and some of those in the on-site programs reported that they had developed new methods of evaluating and testing their students. They tended not to test retention of information. Instead, a student might be asked to design a research study; or, a student might be asked to read some relevant material and assess it. In general, class participation, class presentations, lab reports, and term papers were also important parts of students' final grades.

Teachers tended to feel that intense preparation was necessary for an effective inquiry class. Some of the teachers at both the Academy and the on-site schools felt that this

preparation was not consistent with a full teaching load. At the on-site schools, some of the teachers were phasing inquiry procedures into their classes. In consultation with the coordinators, they were using the inquiry techniques in limited instances, and planning to increase their use of inquiry in future years. In general, teachers agreed that their students had become more active and more interested and that this constituted the reward of inquiry for teachers.

CURRICULUM DEVELOPMENT

At both the Academy and the on-site programs, curriculum development was a focus of the I.D.P. The evaluation team was exposed to the following innovative courses developed by I.D.P. staff:

- the parenting course at Bronx Regional;
- courses ranging from Scientific Instrumentation and Problem Solving to Architecture and Social Issues in the A.C.O.T. program at the Bronx High School of Science;
- a geography course at the Urban Academy being taught simultaneously by two different faculty members with two different approaches;
- a Human Rights course at the Urban Academy.

Documentation of curriculum options in the form of written material and videotapes is available at the Academy.

Cost Effectiveness

Given the overall budget figures provided by the Division of High Schools and the number of students participating in the Urban Academy the average program cost per pupil was calculated at $12,931.03. Part of these funds may have benefitted the on-

site programs. Project staff estimate the average cost per pupil to be $2,764 per semester. Clearly, these two estimates are widely disparate. The discrepancy between the two estimates is significant enough to warrant further scrutiny.

IV. CONCLUSIONS AND RECOMMENDATIONS

The I.D.P. in 1988-89 was a two-tiered project, including one laboratory school, and an on-site staff development program in seven high schools. The major goal of the I.D.P. was to promote use of the inquiry mode of education in the classroom. The inquiry mode is a student-centered process, in which students become active participants in researching and analyzing a body of material.

The I.D.P. began in 1978 as a staff development project working with the principals of five schools. In 1988-89, seven high schools, including several of the original participants, took part in the program. In general, organization at each school was maintained by a teacher at the school, who served as a coordinator and liaison with I.D.P. Somewhere between five or ten teachers served as the core I.D.P. group at the school, meeting, attending workshops, and using inquiry methods in at least some of their classrooms. Some high schools have tended to view the program as a revolving system in which teachers are trained and then assigned to other programs. Other high schools have viewed inquiry groups of teachers as a continuing focus of innovation and development, and have maintained a more stable involvement with I.D.P.

Evaluation of the on-site program involved qualitative analysis of interviews with a sample of administrators, faculty, and students. Interviews with personnel at Bronx High School of Science indicated inquiry as a mode of teaching that teachers

found exciting, and students found challenging, but somewhat threatening. Bronx Science was one of the original schools in I.D.P., and the principal at Bronx Science has supported I.D.P. as a way to involve students in research and renew the enthusiasm of the teachers. Interviews with personnel at Kennedy High School indicated that the faculty saw the program as a opportunity both to improve their teaching and to work with a supportive group of faculty in a large and anonymous high school.

The lab school, the Urban Academy, opened up its doors in September 1988-89. Approximately one-fourth of the fall 1988 Academy students came from the former lab school, the Urban Institute. The remaining students entered between September and April 1988-89.

Quantitative evaluation assessed both attendance and courses passed for Academy students. Although all of the students progressed toward a degree, some made less progress than others, and were not likely to complete high school in four years. However, the Academy was successful in retaining their special group of students: bright, but not conforming. The majority of the students interviewed expressed positive feelings about the Academy and planned to remain there until graduation. Further, the majority of those interviewed had plans for higher education.

Unlike the on-site programs, in which, for the most part, the focus was on the classroom, the Urban Academy concentrated on both classroom and community for the students, offering such activities as community action projects, and birthday parties

within the school day. The Academy attracted and selected a heterogeneous group of students, who were falling and yet ready for an academically challenging, college preparatory program. The Academy appeared to be a useful alternative source of public education for those students who did not adjust to the large, anonymous, neighborhood or specialized high school. While the Inquiry program's success with Academy students is notable, there are some discrepancies in program staff and D.H.S. estimates of the actual cost of program services.

Based on the findings of the evaluation, the following specific recommendations are made:

- Administrators should encourage teachers to remain in the program long enough to allow for experimentation, growth, and development. At the same time, the long-term participant may need continuing options and opportunities. One option may lie in further use of the lab school as a training site, as had been the case prior to 1988-89. Teachers in the on-site program might teach and/or observe at the Academy, working together with faculty at the Academy. Academy students would also benefit from this plan which would give them exposure to a wider variety of teachers;

- Future evaluators should assess, for example, whether inquiry accomplishes its goal to promote critical thinking among the students, and how much this skill benefits the students in their later education.